

REMARKS

Applicant's undersigned counsel personally thanks Examiner Kackar for his the continued careful examination of the application, and for the productive and courteous telephone interview conducted August 19, 2008.

The independent claims 1, 11, 15 and 20 all stand rejected under 35 USC § 102(b) as being anticipated by Tokisue. During the telephone interview, the Tokisue reference was discussed in regard to each of the aforementioned independent claims, as summarized below.

Claim 1:

Claim 1 recites:

- a frame having a clamped in carrier;
- the carrier being adapted to be removably positioned adjacent the surface of a chuck electrode;
- the carrier being made of a nonconductive dielectric material having a conductive layer disposed on one side thereof;
- when positioned adjacently, the conductive layer of the carrier and the surface of the chuck electrode form two plates of a plate-type capacitor.

In the recited construction, the carrier is adapted so that a substrate to be processed, such as a semiconductor wafer, can be secured to the carrier. This construction permits transportation of the frame, the carrier and the substrate together, as a complete assembly, between different processing stations where different operations can be carried out on the substrate. A benefit of this construction is that the substrate itself, which is often delicate and thin, and therefore fragile, is not repeatedly and separately clamped and unclamped into and from successive processing stations, which results in undue stress on the substrate that may cause it to become damaged or cracked. Instead, the frame is physically manipulated to transport the entire assembly to different processing stations, and the carrier with its conductive layer is electrostatically retained in the different stations by applying a voltage between it and the chuck electrode at each station. The substrate itself is retained because it is secured to the carrier during the entire process of operations at successive stations. The substrate is never clamped or unclamped, nor is a voltage applied to it to retain it directly to a chuck electrode, as it traverses different processing stations. All of this work is carried out on the frame and the carrier exclusively, minimizing wear or

damage to the substrate. The substrate need only be manipulated initially to secure it to the carrier, and then finally to remove it from the carrier once all processing is complete.

Turning to the Tomikue reference, as was pointed out during the interview Tomikue discloses a completely different structure where, as illustrated in Fig. 2 and the associated description, the substrate itself (wafer 1') is physically manipulated numerous times to separately transport it between different processing stations. There are no separate frame or carrier elements disclosed in Tomikue comparable to those recited in claim 1. Referring specifically to Fig. 19, cited by the Examiner, there are no frame and no carrier illustrated. Instead, a conductive ceramic 20, which functions as an electrode, has a dielectric film 2' "integrally joined together [and] sintered" therewith. Col. 8, lines 15-23. A voltage source 6 is connected between the conductive ceramic 20 and a conductive portion 4 that sticks up above the surface of the dielectric film 2' so that it will contact the substrate (wafer 1') when the substrate rests on the surface of the film 2'. Accordingly, when switch 7a is closed, a voltage is applied between the conductive ceramic 20 and the wafer 1' directly, thereby causing the wafer itself to be electrostatically attracted to the ceramic 20 to hold it in place.

This is entirely different from claim 1, where the substrate (*cf.* wafer 1' in Tomikue) is not connected to a voltage source, nor is it directly electrostatically attracted to the chuck electrode in that claim. Instead, the substrate is secured to a carrier, which in turn is clamped into a frame. The carrier has a conductive layer, and a voltage is applied between this conductive layer of the carrier and the chuck electrode, thereby causing the carrier and the chuck electrode to electrostatically attract one another, and to form two plates of a plate-type capacitor. Unlike in Tomikue, the substrate itself is not part of the capacitor circuit.

As for the dielectric film 2A in Tomikue, this is not comparable to the carrier in claim 1. For one thing, it does not include a conductive layer as recited in the claim. For another, it is clearly not "*removably* positioned adjacent" the surface of the conductive ceramic 20. As noted above, that layer is "integrally joined together [and] sintered" with the ceramic 20, making their attachment permanent and not removable.

As discussed above and explained during the interview, Tomikue is completely missing numerous features recited in claim 1, namely all of those bulleted above. Accordingly, it is respectfully submitted that the Section 102(b) rejections of claim 1 have been overcome.

Claim 11:

Claim 11 is directed to the structure of the frame and carrier, wherein the carrier is clamped in the frame. In the claim, the carrier is made of a non-conductive dielectric material having a conductive layer disposed one side thereof. The claim also recites the frame is conductive at least in a region thereof and that the conductive layer of the carrier is in contact with the conductive region of the frame. Not one of these features is disclosed in Tomikue. As explained during the interview, that reference simply does not disclose either a frame or a carrier. Instead, the substrate (wafer 1) in Tomikue is disposed directly on a dielectric layer that is permanently adhered to the electrode (e.g. conductive ceramic 20 in Fig. 19). Then a voltage is applied between the wafer itself and the electrode to generate an attractive force. There is no carrier removably positioned adjacent the electrode, and there is no frame. Notably, there is also no need for a carrier having a conductive layer or a frame having a conductive region, considering the substrate itself is part of the capacitor circuit in Tomikue. Accordingly, because Tomikue clearly does not disclose *either* a carrier *or* a frame, or any of the specific features of those elements as-claimed, it is respectfully submitted that Tomikue does not anticipate claim 11 and that the rejection thereof has been overcome.

Claim 15:

Claim 15 is directed to a method of processing a substrate, wherein the substrate is secured to the surface of a carrier that is clamped in a frame. Similarly as in claim 1, the carrier is made of nonconductive dielectric material having a conductive layer disposed at and forming one surface. A voltage source is connected between the chuck electrode and the conductive layer of the carrier, making them (and not the substrate) two plates of a plate-type capacitor. As already discussed, Tomikue is silent as to all these features. It does not disclose a frame, a carrier, the carrier clamped in the frame, or the carrier having a conductive layer that forms a plate-type capacitor together with the chuck electrode. Accordingly, the rejection of claim 15 is also respectfully submitted to be overcome for these reasons and those given above.

Claim 20:

Claim 20 contains numerous features already distinguished from Tomikue above.

Specifically, claim 20 includes a carrier clamped in a frame, the carrier being made of a nonconductive dielectric material having a conductive layer, a voltage source connected between a chuck electrode and the conductive layer of the carrier, and the conductive layer and chuck electrode forming two plates of a plate-type capacitor. Tomikue is silent as to all of these features, and accordingly does not anticipate claim 20 for all the same reasons discussed above.

Accordingly, as explained during the interview based on the reasons summarized above, it is respectfully submitted that all claims are now in condition for allowance and notice to that effect is respectfully requested.

If the Examiner still considers the Tomikue reference to anticipate any claims, or for any other reason to expedite the prosecution hereof, the undersigned would appreciate a telephone call to resolve any remaining concerns prior to the issuance of a further rejection in this case.

If there are any fees required by this communication, please charge any such fees to our Deposit Account 16-0820, Order No. KELR-38477.

Respectfully submitted,

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